

Occupational Visits Narrow v1 **Definition Factsheet & Technical Brief**

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Definition Description:

The objective is to capture **work-related injury emergency department visits** among youth and adults ages 14 years and older. The minimum age of employment is 14 with a few exceptions that may not be fully captured with this definition, such as agricultural jobs and working in a family business.

New or Revised Definition:

Revised Definition

Date Added to ESSENCE: July 2026

Use-Cases for Definition:

Case-finding: Secondary

Trend monitoring: Primary

Early outbreak detection: Not Intended as Use Case

Emergent Condition: Not Intended as Use Case

Justification:

There is not a “work-related” or “occupational” field in ESSENCE, and collection of occupation and industry data is not currently required by facilities that submit data to ESSENCE. The original occupational subsyndrome definition in ESSENCE was evaluated and determined to be too broad, capturing many non-cases.¹ A consistent, accurate, yet adaptable definition to identify work-related emergency department visits is essential for improving usefulness of ESSENCE for timely occupational health surveillance. It may also assist with disaster and outbreak responses where identifying the subset of work-related visits is important.

¹ Harduar Morano L, Kite Powell A, Luckhaupt SE. Evaluation and Revision of Historical ESSENCE Syndromic Surveillance Definition Used to Identify Work-Related Emergency Department Visits. *Public Health Rep.* 2025;140(2-3):192-202. doi:10.1177/00333549241287929

Data Source During Development: Emergency department visits. Chief Complaint Query Validation dataset (CCQV) in ESSENCE.

Validation Methods:

1. See Appendix for full evolution of definition development. A validation worksheet including the query syntax and questions regarding the query was created and introduced to the nine participating jurisdictions (KY, LA, MA, MI, NE, NJ, OR, WI, WA). Participants were asked to review visits between January 1, 2024 and December 31, 2024.
2. Initial review (Round 1) was completed by all nine jurisdictions.
3. After receiving feedback from these jurisdictions, a new iteration of the query was created.
4. Subsequent review (Round 2) was completed by six jurisdictions (KY, LA, MA, MI, WA, WI).

Validation Results: Jurisdictions calculated positive predictive value (PPV) by comparing visits that were deemed a true positive (i.e., a visit of interest) to all visits identified by the definition in a defined period. True positive criteria was based on Occupational Safety and Health Administration (OSHA) standards for recording and reporting occupational injuries and illnesses.² A visit was considered a true positive if it was an initial visit for an injury that occurred while at work, OR an injury that was exacerbated by work activities. At work or work activities means the individual was 1) working for income or pay, or 2) in a volunteer role, 3) while in a training role (e.g. medical/nursing student, resident, apprentice, military training), or 4) doing agricultural production activities. Occurring at work was determined by clear language in the chief complaint to indicate this, or if worker's compensation (or a variant of worker's compensation) was present, or if the discharge diagnosis code was Y99.0 (civilian activity done for income or pay) or Y99.1 (military activity). The visit met the definition of injury if it fell into one of the below categories (based on the BLS Occupational Injuries and Illnesses Classification System, OIICS):

- Traumatic injuries (including injuries to bones, tendons, ligaments; intracranial injuries; contusions, abrasions, bruises, blisters; amputations, lacerations, gunshot wounds)
 - Includes needlestick/sharps injuries, even if no visible injury is seen, due to concern for bloodborne pathogen exposure
- Burns and corrosions
- Effects of environmental conditions (such as temperature, air or water pressure, heat, light)
- Any event/exposure leading to injury (such as violence, transportation incidents, fires/explosions, falls/slips/trips, exposure to harmful substances or environments, contact with objects and equipment, overexertion)

This includes exposure to harmful substances or environments—including allergic reactions, chemical exposures, dermatitis, heat-related illness, etc.

Round 1 of validation testing resulted in a PPV range of 18% to 98% across testing jurisdictions. Round 2 of testing on the updated definition resulted in a PPV range of 85% to 98% reflecting more consistent performance after modifications.

Limitations: This definition may capture certain false positives, such as chronic injuries (regardless of work-relatedness), injuries sustained during recreational/hobby/home-based activities that are difficult to determine whether related to work done for pay, or repeat/follow-up visits for the same injury. There may be chief complaint terms and discharge diagnoses codes that are usually indicative of work-relatedness in some jurisdictions, but not all (e.g. due to presence of certain industries/occupations, such as agricultural activities). Jurisdictions may need to make modifications tailored to their specific contexts as needed; this definition attempted to include work-related terms that would capture the most visits across settings. Additionally, WC is often used as an abbreviation for "worker's compensation", but there are instances when it instead refers to words such as "wheelchair." The definition does attempt to exclude the most common chief complaint terms associated with these cases but may not exclude all instances.

² [1904.5 - Determination of work-relatedness. | Occupational Safety and Health Administration](#)

Definition Fields and Structure:

The Chief Complaint Discharge Diagnosis (CCDD) parsed field and Chief Complaint Updates are used to query both the discharge diagnosis codes and chief complaint free text, and exclusions are incorporated as necessary.

- Inclusion based on work-relatedness in chief complaint free text terms. The visit is included if it contains:
 1. A chief complaint term related to work/work-relatedness—(examples: “at work”, “work injury”, “job injury”, “work rela”, “is employee”, “while working”, “coworker”, “OTJ”, “OJI”, “employee exposure”)
 - a. Nested exclusions include: “not work rela”/“not OTJ”/“not occupational exposure”; “labwork related/bloodwork related/paperwork related”; “while working out” **OR**
 2. A chief complaint term related to worker’s compensation—(examples: “workers comp”, “work comp”, “workm[ae]ns co”, “wcomp”, “wc”)
 - a. Nested exclusions include: “not worker comp”, and wheelchair-related terms: “declined wc”, “bib wc”, “his wc”, “to wc”, “arrives wc”; and other non-work-related terms that use wc as abbreviation: “well child”, “wound check” **AND**
 3. A chief complaint term indicative of injury—(examples: “battery”, “sprain”, “eyewash”, “broke”, “trauma”, “[f[ae]ll”, “twist”, “foot”, “wrist”, “ankle”, “struck”, “bit on”, etc.) **ANDNOT**
 4. A chief complaint term indicative of an illness which would not be considered an injury per the definition outlined in the Validation Results section, including mental health conditions and illnesses usually not associated with a work-related exposure—(examples: “suicid”, “panic attack”, “diabet”, “hypertension”, “vagin”, “cerebrovascular”, “gastric”, “fever”) **OR**
- Inclusion based on ICD-10-CM discharge diagnosis codes that may be work-related (initial encounters where specified). The visit is included if it contains any of the following:
 1. Codes for work-related external causes of morbidity (examples below—see Detailed Definition Components table for full list):
 - a. V69.4[09]XA: Driver of heavy transport vehicle injured in collision, initial encounter **OR**
 - b. W12.XXXA: Fall on and from scaffolding, initial encounter **OR**
 - c. W30.[012389]XXA Exposure to industrial wiring, appliances and electrical machinery, initial encounter **OR**
 - d. W30.[012389]XXA: Contact with agricultural machinery, initial encounter **OR**
 - e. Y35.91XA: Legal intervention, means unspecified, law enforcement official injured, initial encounter **OR**
 2. Place of occurrence factors:
 - a. Y92.6 Industrial and construction area **OR**
 - b. Y92.13 Military base **OR**
 - c. Y92.7 Farm **OR**
 - d. Y92.84 Military training ground **OR**
 - e. Y92.86 Slaughter house **OR**
 3. Activities related to causes of morbidity classified elsewhere
 - a. Y93.H3 Activity, building and construction **OR**
 - b. Y93.81 Activity, refereeing a sports activity **OR**
 4. External cause status (work status codes)
 - a. Y99.0 Civilian activity done for income or pay **OR**
 - b. Y99.1 Military activity **OR**
 5. Factors influencing health status and contact with health services
 - a. Z04.2: Encounter for examination and observation following work accident **OR**
 - b. Z57: Occupational exposure to risk factors **OR**
- Inclusion based on SNOMED CT codes for work-related injuries (examples below—see Detailed Definition Components table for full list). The visit is included if it contains any of the following:
 - 371128008: Occupational injury **OR**
 - 84063009: Traumatic deafness, occupational (disorder) **OR**
 - 16090571000119109: Occupational exposure to toxic agent (event) **OR**
 - 402587003: Occupational dermatitis (disorder) **ANDNOT**
- All of the above must exclude:
 - Terms indicating a non-initial visit for the complaint—(“recheck”, “re eval”, “revisit”, follow up”, etc.) **OR**
 - “Social work”, “case work”, “firework” **OR**
 - Terms related to commute to/from work—(“way to work”, “traveling to work”, “late for work”, etc.)

Plain Language Description: The definition uses free-text chief complaint terms and discharge diagnosis codes. The definition requires that an emergency department visit contains a reference to work-relatedness (including, but not limited to, a mention of worker's compensation) AND a reference to an injury, OR a discharge diagnosis code (ICD-10-M or SNOMED CT code) that is usually associated with a work-related injury. We excluded records with chief complaint text indicating illnesses that would not be considered injuries associated with work exposures (e.g., mental health conditions, chronic health conditions). To ensure that only initial visits for work-related injury are captured, we excluded records with chief complaint text or discharge diagnosis codes indicating follow-up visits for the same injury.

Detailed Definition Components

Table 1. Inclusion and exclusion terms

Terms	Description
<i>Inclusion</i>	
International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)	
V6[0-9][05]XXA	Driver or passenger of heavy transport vehicle injured in collision, initial encounter
V694[09]XA	Driver of heavy transport vehicle injured in collision, initial encounter
V79[04][09]XA	Driver of bus injured in collision, initial encounter
V83[01456]XXA	Occupant of special industrial vehicle injured, initial encounter
V8[45][01456]XXA	Occupant of special agricultural or construction vehicle injured, initial encounter
V86[05][14]XA	Occupant of special all-terrain or off-road motor vehicle injured (ambulance or military vehicle), initial encounter
V954[1-59]XA	Spacecraft accident injuring occupant, initial encounter
W12XXA	Fall on and from scaffolding, initial encounter
W30[012389]XXA	Contact with agricultural machinery, initial encounter
W318[23]XA	Contact with other commercial machinery or special construction vehicle, initial encounter
W861XXA	Exposure to industrial wiring, appliances and electrical machinery, initial encounter
W890XXA	Exposure to welding light (arc), initial encounter
Y926	Industrial and construction area as the place of the occurrence of the external cause
Y9213	Military base as the place of occurrence of the external cause
Y928[46]	Military training ground, or slaughter house as the place of occurrence of the external cause
Y9381	Activity, refereeing a sports activity
Y99[01]	Civilian activity done for income or pay or Military activity
Y351[0129]1A	Legal intervention involving explosives, law enforcement officer, bystander, or unspecified person injured, initial encounter
Y352[0129]1A	Legal intervention involving gas, law enforcement officer, bystander, or unspecified person injured, initial encounter
Y35[34][019]1A	Legal intervention involving blunt objects, law enforcement officer, bystander, or unspecified person injured, initial encounter
Y358[19]1A	Legal intervention involving manhandling or other specified means, initial encounter
Y3591XA	Legal intervention, means unspecified, law enforcement official injured, initial encounter
Y360[0-59]0A	War operations involving explosion of marine weapons, initial encounter
Y361[0-490]0A	War operations involving destruction of aircraft, initial encounter
Y362[0-79]0A	War operations involving other explosions and fragments, initial encounter
Y363[01239]0A	War operations involving fires, conflagrations and hot substances, initial encounter
Y364[1-79]0A	War operations involving firearm discharge and other forms of conventional warfare, initial encounter

Y365[012349]0A	War operations involving nuclear weapons, initial encounter
Y36[67]X0A	War operations involving biological or chemical weapons, initial encounter
Y368[1289]0A	War operations occurring after cessation of hostilities, initial encounter
Y370[0-59]0A	Military operations involving explosion of marine weapons, initial encounter
Y371[012349]0A	Military operations involving destruction of aircraft, initial encounter, initial encounter
Y372[0-79]0A	Military operations involving other explosions and fragments, initial encounter
Y373[01239]0A	Military operations involving fires, conflagrations and hot substances, initial encounter
Y374[1-79]0A	Military operations involving firearm discharge and other forms of conventional warfare, initial encounter
Y375[012349]0A	Military operations involving nuclear weapons, initial encounter
Y37[67]X0A	Military operations involving biological or chemical weapons, initial encounter
Y38[0-7]X1A	Terrorism involving explosion of marine weapons, destruction of aircraft, other explosions and fragments, fires, conflagrations, and hot substances, firearm discharge and other forms of conventional warfare, biological or chemical weapons, initial encounter
Y388[19]1A	Terrorism involving suicide bomber or other means, public safety official injured, initial encounter
Y389X1A	Terrorism, secondary effects, public safety official injured
Z042	Examination and observation following work accident
Z57	Occupational exposure to risk factors
ICD-10-CM Discharge Diagnosis Codes (Nested together with ANDNOT)	
Y35.91XA (Legal intervention, means unspecified, law enforcement official injured)	"By police" or "By law enforcement"
SNOMED Concepts	
371128008	Occupational injury (disorder)
65339005	Disorder due to work-related activity accident (disorder)
95865009	Effects of exposure to extreme temperature, occupational (disorder)
95863002	Effects of occupational exposure to radiation (disorder)
9665009	Occupational friction injury of tooth (disorder)
724872001	Occupational injury of skin caused by corrosive substance (disorder)
84063009	Traumatic deafness, occupational (disorder)
16090691000119109	Occupational exposure to dust (event)
16090451000119101	Occupational exposure to radiation (event)
735932007	Occupational exposure to vibration (event)
102445001	Occupational exposure to toxic dust (event)
16090571000119109	Occupational exposure to toxic agent (event)
102439009	Occupational exposure to toxic waste (event)
102425009	Occupational exposure to polluted air (event)

102433005	Occupational exposure to polluted soil (event)
102428006	Occupational exposure to polluted water (event)
102436002	Occupational exposure to chemical pollution (event)
765226004	Occupational exposure to extreme temperature (event)
102422007	Occupational exposure to environmental pollution (event)
102442003	Occupational exposure to toxic agricultural agent (event)
16090771000119104	Occupational exposure to environmental tobacco smoke (event)
698482005	Occupational disorder of upper limb (disorder)
115966001	Occupational disorder
17542004	Accident while engaged in work-related activity (event)
16090771000119104	Occupational exposure to environmental tobacco smoke (event)
402587003	Occupational dermatitis (disorder)
12441000132105	Occupational skin disease (disorder)
238713002	Occupational vitiligo (disorder)
201220003	Occupational acne (disorder)
733211007	Occupational contact urticaria (disorder)

Chief Complaint Terms

"At work" or "At work" or "Works comp" or "From work" or "During work" or "Sent by work" or "Secondary to work" or "At job" or "Job rela" or "Job exposure" or "On job" or "While working" or "Coworker" or "Employee exposure" or "Employee acc" or "Employee injury" or "Employee complain" or "Employee rela" or "Employee health" or "Exposure employee" or "Injury employee" or "Employee" or "Working with" or "OJI" or "OTJ" or "Occupational health" or "Occupational exp" or "Occupational inj" or "Wrk inj" or "Wrk injury" or "Job inj" or "Accident work" or "Work injury" or "Injury work" or "Wrk acci" or "Work incident" or "Work rela" or "Wrk rela" or "WCOMP" or "Work comp" or "Works comp" or "Wrk comp" or "Work compensation" or "Worker_s comp" or "Workers comp" or "Workmans comp" or "Workmens co" or "Worker mans comp" or "Worker_man_s comp" or "Worker on duty" or "Workm[ae]n^comp" or "Workplace" or "Construction" or "Work van" or "Into work" or "Leaving work" or "Packing plant" or "Factory" or "WC"

Chief Complaint (Nested together with AND)

Employee	"Needle" or "Bodily Fluid" or "Body Fluid" or "On duty"
Coworker	"Assault" or "Attack"

Chief Complaint (Nested together with ANDNOT)

"Work injury" or "Wrk injury" or "Wrk acci" or "Work acci" or "Job inj" or "Injury work" or "Job acci" or "Accident work"	"Chronic" or "History of"
"Work injury" or "Work acci" or "Work incident"	"Firework" or "Firwork"
Work rela	"Not work rela" or "Non work rela" or

	"Bloodwork rela" or "Lab work rela" or "Labwork rela" or "Paper work rela" or "Paperwork rela"
Work comp	"Not work comp" or "Labwork comp" or "Bloodwork comp" or "Lab work comp" or "Blood work comp" or "Work completed"
Works comp	Not works comp
Work compensation	Not work compensation
Worker_s comp	Not worker_s comp
Workers comp	Not workers comp
Workmans comp	Not workmans comp
Workmens co	Not workmens co
While working While working	"Working out*" or "Working at home" (ANDNOT "working at home depot") or "At home while working" or "Working^yard" or "Working^garden" or "Working^kitchen" or "Working^shed" or "Working on" or "Working with" or "Working her"
From work	"Home" or "Driving from work" or "Sent home"
Working with	"Working with PT" or "Working with PCP" or "Working with doc" or "Working with ortho"
Hit	Did not Hit
Broke	Water broke
Trauma	Denies trauma
Needle	"Pins and needle" or "Needle biopsy"
WCOMP	Not WCOMP
OJI	Not OJI
OTJ	Not OTJ
Work rela	Not work rela
Wrk rela	Not wrk rela
Injury work	Denies injury work
Wrk comp	Not wrk comp
"WC" or "W/C"	"wound check" or "well child" or "not wc" or "not w/c" or "WC dependent" or "W/C dependant" or "Patient a WC" or "Patient a W/C" or "wheelchair" or "wheel chair" or "by wheelchair" or "seeing WC" or "seeing W/C" or "WC center" or "W/C center" or "personal WC" or "personal W/C" or "p[re][er]scription for WC" or "p[re][er]scription for W/C" or "arrives WC" or "arrives W/C" or "arrived with wc" or "arrived with w/c" or "refusing wc" or "refusing w/c" or "refused wc" or "refused w/c" or "ems wc" or "ems w/c" or "decline wc" or "decline w/c" or "WC roll" or "W/C roll" or "follow up" or "Recheck" or "from wc" or "from w/c" or "by wc" or "by w/c" or "in wc" or "in w/c" or "to wc" or "to w/c" or "via wc" or "via w/c" or "of wc" or "of w/c" or "his wc" or "his w/c" or "her wc" or "her w/c" or "own wc" or "bib wc" or "power wc" or "motorized wc" or "electric wc" or "electric w/c" or "hospital wc" or "hospital w/c" or "wc van" or "w/c van" or "wc transport" or "w/c transport" or "into wc" or "into w/c" or "per wc" or "per w/c" or "OR wc" or "OR w/c" or "or wc" or "or w/c" or "and wc" or "and w/c" or "Duncan" or "Bound" or "bring wc" or "bring w/c" or "sitting in wc" or "sitting in w/c" or "wc assistance" or "w/c assistance" or "offered wc" or "offered w/c" or "uses wc at home" or "uses w/c at home" or "typically uses wc" or "typically uses w/c" or "uses wc for mobility" or "uses w/c for mobility" or "uses a wc" or "uses a w/c" or "wc to" or "w/c to" or "declined wc" or "declined w/c"

Exclusion	
Chief Complaint Terms	
"Not working" or "Suicid" or "Anxiety" or "Panic attack" or "Mental health eval" or "Period pain" or "Menstrual period" or "Sick" or "Paperwork" or "Paper work" or "Hypotension" or "Vagin" or "Gastric" or "Cerebrovascular" or "Tetanus" or "TDAP" or "Workout" or "Work out" or "Followup" or "Recheck" or "Re check" or "Re visit" or "Reeval" or "Re eval" or "For same complaint" or "Works complains" or "Work complains" or "Tuberculosis" or "Covid"	
Chief Complaint (Nested together with ANDNOT)	
Working at home	"Working at home depot"
Fever	"Denies fever" or "No fever" or "Denie[ds] any fever" or "No recent fever"
Note	"Noted" or "Notes" or "Of note"
Diabet	"History" or "Pmh" or "Diabetic lancet"
Hypertension	"History" or "Pmh"
Year	Year_old
Yr ago	"Tetanus" or TDAP"
Yrs ago	
Workup Work up	Had work up
Follow up	"Follow up with" or "Follow up app" or "Follow up instruction" or "Had follow up"
Discharge diagnosis codes block (ICD-10-CM and SNOMED Concepts)	"Way to work" or "Workout" or "Work out" or "Follow up" ANDNOT ("Follow up with" or "Follow up as noted" or "Follow up app") or "Follow-up" or "Recheck" or "Re check" or "Re-check" or "Re visit" or "Revisit" or "Re-visit" or "Re eval" or "Re-eval" or "Working out"

Table 2. ESSENCE syntax

<u>CC and DD Parsed Free Text, also apply to Chief Complaint Updates field:</u> (,(!,(!WCOMP!,),ANDNOT,^not wcomp^,OR,(!OTJ!,),ANDNOT,(^not otj^,OR,^not oji^,),OR,^job rela^,OR,^job expo^,OR,^sent by work^,OR,^employee exposure^,OR,^employee acc^,OR,^employee injury^,OR,^injury employee^,OR,^employee complain^,OR,^employee rel^,OR,^employee health^,OR,^exposure employee^,OR,^work rela^,ANDNOT,(^not work rela^,OR,^non work rela^,OR,^labwork^,OR,^lab work^,OR,^bloodwork^,OR,^blood work^,OR,^paperwork^,OR,^paper work^,),OR,^work comp^,ANDNOT,(^not work comp^,OR,^bloodwork comp^,OR,^blood work comp^,OR,^labwork comp^,OR,^lab work comp^,),OR,^works comp^,ANDNOT,^not works comp^,OR,^workers comp^,ANDNOT,^not workers comp^,OR,^work comp ^,ANDNOT,^work completed^,OR,^work compensation^,ANDNOT,^not work compensation^,OR,^worker_s comp^,ANDNOT,^not worker_s comp^,OR,^workmans comp^,ANDNOT,^not workmans comp^,OR,^workmens co^,ANDNOT,^not workmens co^,OR,^worker mans comp^,OR,^worker_man_s comp^,OR,^worker on duty^,OR,^Occupational exp^,OR,^occupational inj^,OR,^occupational health^,OR,^wrk rela^, ANDNOT,^not wrk rela^,OR,(^work injury^,OR,!wrk injury!,OR,^wrk acci^,OR,^job inj^,OR,^job acci^,OR,^accident work^,),ANDNOT,(^chronic^,OR,^history of^,),OR,^ wrk rela^, ANDNOT,^not wrk rela^,OR,^ wrk comp^,ANDNOT,^not wrk comp^,OR,^workm[ae]n^comp^,OR,^secondary to work^,OR,^coworker^,AND,(^assault^,OR,^attack^,),OR,^injury work^,ANDNOT,^denies injury work^,OR,(^work inj^,OR,^work acci^,OR,^work incident^,),ANDNOT,(^firework^,OR,^firwork^,),OR,^employee^,AND,(^needle^,OR,^bodily fluid^,OR,^body fluid^,OR,^ on duty^,OR,^on duty^,),OR,^while working^,ANDNOT,(^working out^,OR,^working at home^,ANDNOT,^working at home depot^,OR,^at home while working^,OR,^working^yard^,OR,^working^garden^,OR,^working^kitchen^,OR,^working^shed^,OR,^working on^,OR,^working her ^,),OR,(^from work^,ANDNOT,(^home^,OR,^driving from work^,OR,^sent home^,),OR,^ construction^,OR,^at job^,OR,^at work^,OR,^at wrok^,OR,^on job^,OR,^workplace^,OR,^employee^,OR,^work

van^,OR,^working with^,ANDNOT,(^working with PT^,OR,^working with pcp^,OR,^working with doc^,OR,^working with ortho^),OR,^into work^,OR,^leaving work^,OR,^Packing plant^,OR,^factory^,OR,(,^while working^,OR,^works at^,OR,^Working at^,OR,^was working^,OR,^During work^),),ANDNOT,(,^house^,OR,^garden^,OR,^workout^,OR,^working out^),),OR,(,^WC!,OR,^W/C!),ANDNOT,(,^wound check^,OR,^well child^,OR,^not wc^,OR,^not w/c^,OR,^WC dependant^,OR,^W/C dependant^,OR,^Patient^a WC^,OR,^Patient^a W/C^,OR,^wheelchair^,OR,^wheel chair^,OR,^by wheelchair^,OR,^seeing WC^,OR,^seeing W/C^,OR,^WC center^,OR,^W/C center^,OR,^personal WC^,OR,^personal W/C^,OR,^p[re][er]scription for WC^,OR,^p[re][er]scription for W/C^,OR,^arrives WC,OR,^arrives W/C,OR,^arrived with wc^,OR,^arrived with w/c^,OR,^refusing wc^,OR,^refusing w/c^,OR,^refused wc^,OR,^refused w/c^,OR,^ems wc^,OR,^ems w/c^,OR,^decline^ wc^,OR,^decline^ w/c^,OR,^WC roll^,OR,^W/C roll^,OR,^follow up^,OR,^recheck^,OR,^from wc^,OR,^from w/c^,OR,^by wc^,OR,^by w/c^,OR,^ in wc^,OR,in wc^,OR,^ in w/c^,OR,in w/c^,OR,^to wc^,OR,^to w/c^,OR,^via wc^,OR,^via w/c^,OR,^of wc^,OR,^of w/c^,OR,his wc^,OR,his w/c^,OR,^ his wc^,OR,^ his w/c^,OR,her wc^,OR,her w/c^,OR,^ her wc^,OR,^ her w/c^,OR,^own wc^,OR,^own wc^,OR,^bib wc^,OR,^bib wc^,OR,^power wc^,OR,^power wc^,OR,^motorized wc^,OR,^motorized wc^,OR,^electric wc^,OR,^electric w/c^,OR,^hospital wc^,OR,^hospital w/c^,OR,^wc van^,OR,^w/c van^,OR,^wc transport^,OR,^w/c transport^,OR,^into wc^,OR,^into w/c^,OR,^per wc^,OR,^per w/c^,OR,OR wc^,OR,OR w/c^,OR,^ or wc^,OR,^ or w/c^,OR,^and wc^,OR,^and w/c^,OR,^Duncan^,OR,^Bound^,OR,^bring wc^,OR,^bring w/c^,OR,^sitting in wc^,OR,^sitting in w/c^,OR,^wc assistance^,OR,^w/c assistance^,OR,^offered wc^,OR,^offered w/c^,OR,^wc van^,OR,^w/c van^,OR,^uses wc at home^,OR,^uses w/c at home^,OR,^typically uses wc^,OR,^typically uses w/c^,OR,^uses wc for mobility^,OR,^uses w/c for mobility^,OR,^uses a wc^,OR,^uses a w/c^,OR,^wc to^,OR,^w/c to^,OR,^declined wc^,OR,^declined w/c^),),), **AND**,(^heat^,OR,^accident^,OR,^abrasion^,OR,^bit on^,OR,^bit by^,OR,^Bit at^,OR,^bit h^,OR,^bite^,OR,^battery^,OR,^ car^ hit^,OR,^needle stick^,OR,^sprain^,OR,^bleach^,OR,^chemical^,OR,^eyewash^,OR,^eye wash^,OR,^laceration^,OR,^push^,OR,^hit by^,OR,^burn^,OR,^f[ae]ll^,OR,^ cut ^,OR,^cut ^,OR,^ cut,OR,^hit!,ANDNOT,^did not hit^,OR,^slip^,OR,^finger^,OR,^toe^,OR,^twist^,OR,^lift^,OR,^foot^,OR,^rabies^,OR,^scratch^,OR,^ankle^,OR,^ wrist^,OR,^jump^,OR,^struck^,OR,^thumb^,OR,^splash^,OR,^hurt hand^,OR,^hurt back^,OR,^hurt knee^,OR,^ hand^,OR,^hand^,OR,^pop^,OR,^inhale^,OR,^inhaling^,OR,^bend^,OR,^fumes^,OR,^trip^,OR,^broke^,ANDNOT, ^water broke^,OR,^smashed^,OR,^stung^,OR,^electric^,OR,^electrocute^,OR,^debris^,OR,^injur^,ANDNOT,^denies injur^,OR,^ trauma^,ANDNOT,^denies trauma^,OR,^needle^,ANDNOT,(^pins and needle^,OR,^needle biopsy^),),),

OR,

(, (^,371128008;^,OR,^;65339005;^,OR,^;95865009;^,OR,^;95863002;^,OR,^;9665009;^,OR,^;724872001;^,OR,^;84063009;^,OR,^;16090691000119109;^,OR,^;16090451000119101;^,OR,^;735932007;^,OR,^;102445001;^,OR,^;16090571000119109;^,OR,^;102439009;^,OR,^;102425009;^,OR,^;102433005;^,OR,^;102428006;^,OR,^;102436002;^,OR,^;765226004;^,OR,^;102422007;^,OR,^;102442003;^,OR,^;16090771000119104;^,OR,^;698482005;^,OR,^;115966001;^,OR,^;17542004;^,OR,^;16090771000119104;^,OR,^;402587003;^,OR,^;12441000132105;^,OR,^;238713002;^,OR,^;201220003;^,OR,^;733211007;^,OR,^;V6[0-9][05]XXA^,OR,^;V694[09]XA^,OR,^;V79[04][09]XA^,OR,^;V8[345][01456]XXA^,OR,^;V86[05][14]XA^,OR,^;V954[1-59]XA^,OR,^;W12XXXXA^,OR,^;W30[012389]XXA^,OR,^;W318[23]XA^,OR,^;W861XXA^,OR,^;W890XXA^,OR,^;Y926^,OR,^;Y9213^,OR,^;Y928[46]^,OR,^;Y9381^,OR,^;Y99[01]^,OR,^;Y351[0129]1A^,OR,^;Y352[0129]1A^,OR,^;Y35[34][019]1A^,OR,^(,^Y358[19]1A^,OR,^;Y3591XA^),ANDNOT,(^by police^,OR,^by law enforcement^),OR,^Y360[0-59]0A^,OR,^;Y361[0-49]0A^,OR,^;Y362[0-79]0A^,OR,^;Y363[01239]0A^,OR,^;Y364[1-79]0A^,OR,^;Y365[0-49]0A^,OR,^;Y36[67]X0A^,OR,^;Y368[1289]0A^,OR,^;Y370[0-59]0A^,OR,^;Y371[0-49]0A^,OR,^;Y372[0-79]0A^,OR,^;Y373[01239]0A^,OR,^;Y374[1-79]0A^,OR,^;Y375[0-49]0A^,OR,^;Y37[67]X0A^,OR,^;Y38[0-7]X1A^,OR,^;Y388[19]1A^,OR,^;Y389X1A^,OR,^;Z042^,OR,^;Z57^),),),ANDNOT,

(,^way to work^,OR,^working at home^,ANDNOT,^working at home depot^,OR,^not working^,OR,^working out^,OR,^suicid^,OR,^anxiety^,OR,^panic attack^,OR,^mental health eval^,OR,^period pain^,OR,^menstrual period^,OR,^sick,OR,^paperwork^,OR,^paper work^,OR,^fever^,ANDNOT,(^Denies fever^,OR,^No Fever^,OR,^Denie[ds] any fever^,OR,^no recent fever^),OR,^note^,ANDNOT,(^noted^,OR,^notes^,OR,^of

note^,),OR,^diabet^,ANDNOT,(^history^,OR,^pmh^,OR,^diabetic
lancet^,),OR,^hypertension^,ANDNOT,(^History^,OR,^pmh^,),OR,^hypotension^,OR,^vagin^,OR,^
gastric^,OR,^cerebrovascular^,OR,^Year^,ANDNOT,(^Year_old^,OR,^TETANUS^,OR,^TDAP^,),OR,(^yr
ago^,OR,^yrs ago^,),ANDNOT,(^Tetanus^,OR,^TDAP^,),OR,^workout^,OR,^work out^,OR,(^workup^,OR,^work
up ^,OR,^work up,^),ANDNOT,^had work up^,OR,^followup^,OR,^follow up^,OR,^follow-up^,ANDNOT,(^follow up
with^,OR,^follow-up with^,OR,^follow up as noted^,OR,^follow-up as noted^,OR,^follow up app^,OR,^follow-up
app^,OR,^follow up instruction^,OR,^follow-up instruction^,OR,^had follow up^,OR,^had follow-up^,),OR,^
recheck^,OR,^ re check^,OR,^re check^,OR,^re-check^,OR,^ re visit^,OR,^re visit^,OR,^ revisit^,OR,^re-visit^,OR,^
re eval^,OR,^re eval^,OR,^reeval^,OR,^re-eval^,OR,^for same
complaint^,OR,^tuberculosis^,OR,^covid^,OR,^works complains^,OR,^work complains^,))

Addendum: Modified Syntax

If using a local version of ESSENCE (other than NSSP), please use the appropriate corresponding fields/coding to best match this factsheet. If you are using the CC and DD field instead of CC and DD Parsed, we recommend using the below syntax that expands ICD-10-CM codes to include both versions with and without decimal points.

CC and DD, also apply to Chief Complaint Updates field:

((,((WCOMP^,OR,^ WCOMP,OR,WCOMP ^,OR,^ WCOMP ^OR,!WCOMP!),),ANDNOT,^not
wcomp^,OR,(OJI,OR,^ OJI,OR,OJI ^,OR,^ OJI ^,OR,!OJI!,OR,OTJ,OR,^ OTJ,OR,OTJ ^,OR,^ OTJ
^,OR,!OTJ!),),ANDNOT,(^not otj^,OR,^not oji^,),OR,^job rela^,OR,^job expo^,OR,^sent by work^,OR,^employee
exposure^,OR,^employee acc^,OR,^employee injury^,OR,^injury employee^,OR,^employee
complain^,OR,^employee rel^,OR,^employee health^,OR,^exposure employee^,OR,^work rela^,ANDNOT,(^not
work rela^,OR,^non work rela^,OR,^labwork^,OR,^lab work^,OR,^bloodwork^,OR,^blood
work^,OR,^paperwork^,OR,^paper work^,),OR,^work comp^,ANDNOT,(^not work comp^,OR,^bloodwork
comp^,OR,^blood work comp^,OR,^labwork comp^,OR,^lab work comp^,),OR,^works comp^,ANDNOT,^not
works comp^,OR,^workers comp^,ANDNOT,^not workers comp^,OR,^work comp ^,ANDNOT,^work
completed^,OR,^work compensation^,ANDNOT,^not work compensation^,OR,^worker_s comp^,ANDNOT,^not
worker_s comp^,OR,^workmans comp^,ANDNOT,^not workmans comp^,OR,^workmens co^,ANDNOT,^not
workmens co^,OR,^worker mans comp^,OR,^worker_man_s comp^,OR,^worker on duty^,OR,^Occupational
exp^,OR,^occupational inj^,OR,^occupational health^,OR,(^work injury^,OR,^ wrk inj^,OR,wrk inj,OR,wrk
inj^,OR,!wrk injury!,OR,^ wrk acci^,OR,^job inj^,OR,^job acci^,OR,^accident
work^,),ANDNOT,(^chronic^,OR,^history of^,),OR,^ wrk rela^,ANDNOT,^not wrk rela^,OR,^ wrk
comp^,ANDNOT,^not wrk comp^,OR,^workm[ae]n^comp^,OR,^secondary to
work^,OR,^coworker^,AND,(^assault^,OR,^attack^,),OR,^injury work^,ANDNOT,^denies injury work^,OR,(^work
inj^,OR,^work acci^,OR,^work
incident^,),ANDNOT,(^firework^,OR,^firwork^,),OR,^employee^,AND,(^needle^,OR,^bodily fluid^,OR,^body
fluid^,OR,^ on duty^,OR,^on duty^,),OR,^while working^,ANDNOT,(^working out^,OR,^working at
home^,ANDNOT,^working at home depot^,OR,^at home while
working^,OR,^working^yard^,OR,^working^garden^,OR,^working^kitchen^,OR,^working^shed^,OR,^working
on^,OR,^working her ^,),OR,(^from work^,ANDNOT,(^home^,OR,^driving from work^,OR,^sent home^,),OR,^
construction^,OR,^at job^,OR,^at work^,OR,^at wrok^,OR,^on job^,OR,^workplace^,OR,^employee^,OR,^work
van^,OR,^working with^,ANDNOT,(^working with PT^,OR,^working with pcp^,OR,^working with
doc^,OR,^working with ortho^,),OR,^into work^,OR,^leaving work^,OR,^Packing
plant^,OR,^factory^,OR,(^while working^,OR,^works at^,OR,^Working at^,OR,^was working^,OR,^During
work^,),ANDNOT,(^house^,OR,^garden^,OR,^workout^,OR,^working out^,),),OR,(^WC,OR,^ WC,OR,WC
^,OR,^ WC ^,OR,!WC!,OR,W/C,OR,^ W/C,OR,W/C ^,OR,^ W/C ^,OR,!W/C!,),ANDNOT,(^wound
check^,OR,^well child^,OR,^not wc^,OR,^not w/c^,OR,^WC dependent^,OR,^W/C dependant^,OR,^Patient^a
WC^,OR,^Patient^a W/C^,OR,^wheelchair^,OR,^wheel chair^,OR,^by wheelchair^,OR,^seeing WC^,OR,^seeing
W/C^,OR,^WC center^,OR,^W/C center^,OR,^personal WC^,OR,^personal W/C^,OR,^p[re][er]scription for
WC^,OR,^p[re][er]scription for W/C^,OR,^arrives WC,OR,^arrives W/C,OR,^arrived with wc^,OR,^arrived with
w/c^,OR,^refusing wc^,OR,^refusing w/c^,OR,^refused wc^,OR,^refused w/c^,OR,^ems wc^,OR,^ems
w/c^,OR,^decline^ wc^,OR,^decline^ w/c^,OR,^WC roll^,OR,^W/C roll^,OR,^follow up^,OR,^recheck^,OR,^from
wc^,OR,^from w/c^,OR,^by wc^,OR,^by w/c^,OR,^ in wc^,OR,^in wc^,OR,^ in w/c^,OR,^in w/c^,OR,^to wc^,OR,^to
w/c^,OR,^via wc^,OR,^via w/c^,OR,^of wc^,OR,^of w/c^,OR,^his wc^,OR,^his w/c^,OR,^ his wc^,OR,^ his

w/c^,OR,her wc^,OR,her w/c^,OR,^ her wc^,OR,^ her w/c^,OR,^own wc^,OR,^own wc^,OR,^bib wc^,OR,^bib wc^,OR,^power wc^,OR,^power wc^,OR,^motorized wc^,OR,^motorized wc^,OR,^electric wc^,OR,^electric w/c^,OR,^hospital wc^,OR,^hospital w/c^,OR,^wc van^,OR,^w/c van^,OR,^wc transport^,OR,^w/c transport^,OR,^into wc^,OR,^into w/c^,OR,^per wc^,OR,^per w/c^,OR,OR wc^,OR,OR w/c^,OR,^ or wc^,OR,^ or w/c^,OR,^and wc^,OR,^and w/c^,OR,^Duncan^,OR,^Bound^,OR,^bring wc^,OR,^bring w/c^,OR,^sitting in wc^,OR,^sitting in w/c^,OR,^wc assistance^,OR,^w/c assistance^,OR,^offered wc^,OR,^offered w/c^,OR,^wc van^,OR,^w/c van^,OR,^uses wc at home^,OR,^uses w/c at home^,OR,^typically uses wc^,OR,^typically uses w/c^,OR,^uses wc for mobility^,OR,^uses w/c for mobility^,OR,^uses a wc^,OR,^uses a w/c^,OR,^wc to^,OR,^w/c to^,OR,^declined wc^,OR,^declined w/c^,)),), **AND**,(^heat^,OR,^accident^,OR,^abrasion^,OR,^bit on^,OR,^bit by^,OR,^Bit at^,OR,^bit h^,OR,^bite^,OR,^battery^,OR,^ car^ hit^,OR,^needle stick^,OR,^sprain^,OR,^bleach^,OR,^chemical^,OR,^eyewash^,OR,^eye wash^,OR,^laceration^,OR,^push^,OR,^hit by^,OR,^burn^,OR,^f[ae]ll^,OR,^ cut ^,OR,cut ^,OR,^ cut,OR,(,^ hit ^,OR,hit ^,OR,^ hit,)),OR,!hit!,ANDNOT,^did not hit^,OR,^slip^,OR,^finger^,OR,^toe^,OR,^twist^,OR,^lift^,OR,^foot^,OR,^rabies^,OR,^scratch^,OR,^ankle^,OR,^ wrist^,OR,^jump^,OR,^struck^,OR,^thumb^,OR,^splash^,OR,^hurt hand^,OR,^hurt^back^,OR,^hurt knee^,OR,^ hand^,OR,hand^,OR,^pop^,OR,^inhale^,OR,^inhaling^,OR,^bend^,OR,^fumes^,OR,^trip^,OR,^broke^,ANDNOT, ^water broke^,OR,^smashed^,OR,^stung^,OR,^electric^,OR,^electrocute^,OR,^debri^,OR,^injur^,ANDNOT,^denies injur^,OR,^ trauma^,ANDNOT,^denies trauma^,OR,^needle^,ANDNOT,(^pins and needle^,OR,^needle biopsy^,)),),

OR,

(, (^;371128008;^,OR,^;65339005;^,OR,^;95865009;^,OR,^;95863002;^,OR,^;9665009;^,OR,^;724872001;^,OR, ^;84063009;^,OR,^;16090691000119109;^,OR,^;16090451000119101;^,OR,^;735932007;^,OR,^;102445001;^, OR,^;16090571000119109;^,OR,^;102439009;^,OR,^;102425009;^,OR,^;102433005;^,OR,^;102428006;^,OR,^; 102436002;^,OR,^;765226004;^,OR,^;102422007;^,OR,^;102442003;^,OR,^;16090771000119104;^,OR,^;69848 2005;^,OR,^;115966001;^,OR,^;17542004;^,OR,^;16090771000119104;^,OR,^;402587003;^,OR,^;12441000132 105;^,OR,^;238713002;^,OR,^;201220003;^,OR,^;733211007;^,OR,^;V6[0- 9][05]XXA^,OR,^;V694[09]XA^,OR,^;V79[04][09]XA^,OR,^;V83[01456]XXA^,OR,^;V8[45][01456]XXA^,OR,^;V86[05][14]XA^,OR,^;V954[1- 59]XA^,OR,^;W12.XXXA^,OR,^;W30[012389]XXA^,OR,^;W318[23]XA^,OR,^;W861XXA^,OR,^;W890XXA^,OR,^; Y926^,OR,^;Y9213^,OR,^;Y928[46]^,OR,^;Y9381^,OR,^;Y99[01]^,OR,^;Y351[0129]1A^,OR,^;Y352[0129]1A^,O R,^;Y35[34][019]1A^,OR,(,^;Y358[19]1A^,OR,^;Y3591XA^,OR,^;Y35.8[19]1A^,OR,^;Y35.91XA^,)),ANDNOT,(^by police^,OR,^by law enforcement^,)),OR,^Y360[0-59]0A^,OR,^;Y361[0-490]0A^,OR,^;Y362[0- 79]0A^,OR,^;Y363[01239]0A^,OR,^;Y364[1-79]0A^,OR,^;Y365[0- 49]0A^,OR,^;Y36[67]X0A^,OR,^;Y368[1289]0A^,OR,^;Y370[0-59]0A^,OR,^;Y371[0-49]0A^,OR,^;Y372[0- 79]0A^,OR,^;Y373[01239]0A^,OR,^;Y374[1-79]0A^,OR,^;Y375[0-49]0A^,OR,^;Y37[67]X0A^,OR,^;Y38[0- 7]X1A^,OR,^;Y388[19]1A^,OR,^;Y389X1A^,OR,^;Z042^,OR,^;V6[0- 9].[05]XXA^,OR,^;V69.4[09]XA^,OR,^;V79.[04][09]XA^,OR,^;V83.[01456]XXA^,OR,^;V8[45].[01456]XXA^,OR,^;V 86.[05][14]XA^,OR,^;V95.4[1- 59]XA^,OR,^;W12.XXXA^,OR,^;W30.[012389]XXA^,OR,^;W31.8[23]XA^,OR,^;W86.1XXA^,OR,^;W89.0XXA^,O R,^;Y92.6^,OR,^;Y92.13^,OR,^;Y92.8[46]^,OR,^;Y93.81^,OR,^;Y99.[01]^,OR,^;Y35.1[0129]1A^,OR,^;Y35.2[0129]1A^,OR,^;Y35.[34][019]1A^,OR,^Y36.0[0-59]0A^,OR,^;Y36.1[0-490]0A^,OR,^;Y36.2[0- 79]0A^,OR,^;Y36.3[01239]0A^,OR,^;Y36.4[1-79]0A^,OR,^;Y36.5[0- 49]0A^,OR,^;Y36.[67]X0A^,OR,^;Y36.8[1289]0A^,OR,^;Y37.0[0-59]0A^,OR,^;Y37.1[0-49]0A^,OR,^;Y37.2[0- 79]0A^,OR,^;Y37.3[01239]0A^,OR,^;Y37.4[1-79]0A^,OR,^;Y37.5[0-49]0A^,OR,^;Y37.[67]X0A^,OR,^;Y38.[0- 7]X1A^,OR,^;Y38.8[19]1A^,OR,^;Y38.9X1A^,OR,^;Z04.2^,OR,^;Z57^,)),),

ANDNOT,

(,^way to work^,OR,^working at home^,ANDNOT,^working at home depot^,OR,^not working^,OR,^working out^,OR,^suicid^,OR,^anxiety^,OR,^panic attack^,OR,^mental health eval^,OR,^period pain^,OR,^menstrual period^,OR,^sick,OR,^paperwork^,OR,^paper work^,OR,^fever^,ANDNOT,(^Denies fever^,OR,^No Fever^,OR,^Denie[ds] any fever^,OR,^no recent fever^,)),OR,^note^,ANDNOT,(^noted^,OR,^notes^,OR,^of

note^,),OR,^diabet^,ANDNOT,(^history^,OR,^pmh^,OR,^diabetic
 lancet^,),OR,^hypertension^,ANDNOT,(^History^,OR,^pmh^,),OR,^hypotension^,OR,^vagin^,OR,^
 gastric^,OR,^cerebrovascular^,OR,^Year^,ANDNOT,(^Year_old^,OR,^TETANUS^,OR,^TDAP^,),OR,(^yr
 ago^,OR,^yrs ago^,),ANDNOT,(^Tetanus^,OR,^TDAP^,),OR,^workout^,OR,^work out^,OR,(^workup^,OR,^work
 up ^,OR,^work up,),ANDNOT,^had work up^,OR,^followup^,OR,^follow up^,OR,^follow-up^,ANDNOT,(^follow up
 with^,OR,^follow-up with^,OR,^follow up as noted^,OR,^follow-up as noted^,OR,^follow up app^,OR,^follow-up
 app^,OR,^follow up instruction^,OR,^follow-up instruction^,OR,^had follow up^,OR,^had follow-up^,),OR,^
 recheck^,OR,^ re check^,OR,^re check^,OR,^re-check^,OR,^ re visit^,OR,^re visit^,OR,^ revisit^,OR,^re-visit^,OR,^
 re eval^,OR,^re eval^,OR,^reeval^,OR,^re-eval^,OR,^for same
 complaint^,OR,^tuberculosis^,OR,^covid^,OR,^works complains^,OR,^work complains^,),)

Appendix

Definition Evolution During Development

1. A revised work-related definition was developed from the original, previously unevaluated occupational subsyndrome definition in ESSENCE which uses weighted inclusion and exclusion keywords. Records identified by the original work-related definition were evaluated against ICD-10-CM work-status codes (Y99.0/Y99.1). Additional candidate inclusion and keywords were then examined, and the revised definition was evaluated.
 - a. For full details on the process of this initial revised definition, see: Harduar Morano L, Kite Powell A, Luckhaupt SE. Evaluation and Revision of Historical ESSENCE Syndromic Surveillance Definition Used to Identify Work-Related Emergency Department Visits. *Public Health Rep.* 2025;140(2-3):192-202. doi:10.1177/00333549241287929
2. Addition of discharge diagnosis codes: a team including CDC and state-based ESSENCE users (including occupational SMEs) developed a list of potentially work-related discharge diagnosis codes (ICD-10-CM and SNOMED codes). They then performed manual reviews of records to determine which codes to retain in the revised work-related definition.
 - a. This list was informed by: Bush AM, Bunn TL, Liford M. Identification of work-related injury emergency department visits using International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes. *Inj Prev.* 2021;27(S1):i3-i8. doi:10.1136/injuryprev-2019-043507.
3. Two work-related definitions were developed: a broad definition to capture all work-related visits – injuries and illnesses, and a narrow one focused on injuries only (the current definition). Additional inclusion and exclusion terms were added to the respective definitions in an iterative process.
4. The definitions were then tested by the nine participating jurisdictions (KY, LA, MA, MI, NE, NJ, OR, WI, WA), and CDC at the national level. (See Validation Methods above.)
5. Feedback from the testers informed changes to refine inclusion/exclusion chief complaint terms and discharge diagnosis codes.
 - a. Major changes included:
 - b. Removed ICD-10-CM codes Y93.H9 (Activity, building and construction) and Y93.H3 (Activity, other involving exterior property and land maintenance, building and construction) which were often undetermined visits and reported problematic by multiple states
 - c. Added “chronic”, “history of” as exclusion terms for work injury terms to attempt to exclude old/chronic (>1 yr old) injuries
 - d. Added “not” versions of inclusions terms, such as “not work rela”, “not workers comp”, etc.
 - e. Additional exclusion terms for WC (which is a common abbreviation for worker’s compensation) such as well child, wound check, and additional wheelchair-related terms
 - f. Additional exclusions for home/hobbies/recreational, non-work activities (e.g. working on his/her car, working in the yard, etc.).
 - g. Exclusions for social work, labwork, bloodwork, paperwork as the mention of “work” in the chief complaint
6. Updated definitions were tested by a subset of the original nine jurisdictions (KY, LA, MA, MI, WA, WI) and CDC at the national level to obtain a final PPV.